WHAT IS CLAIMED IS:

1. A process for the dispersion of water-soluble or hydrophilic substances in a fluid at supercritical pressure by addition of a surfactant, said surfactant being a block copolymer comprising at least one CO_2-philic block and at least one nonionic hydrophilic block.

2. The process as claimed in claim 1, characterized in that the fluid at supercritical pressure is CO_2.

3. The process as claimed in claim 1, characterized in that the fluid at supercritical pressure is CO_2 comprising an entrainer in an amount of less than 5%.

4. The process as claimed in claim 1, characterized in that the CO_2-philic block is chosen from the group consisting of polymers which are soluble in CO_2 at supercritical pressure.

5. The process as claimed in any one of claims 1 to 4, characterized in that the block copolymers are copolymers which are soluble in supercritical CO_2.

6. The process as claimed in claim 5, characterized in that the minimum solubility of the block copolymers is 0.05% w/w and preferably 0.2% w/w at at least one defined temperature which is between 0°C and 100°C, preferably at least one defined temperature which is between 15°C and 60°C, and at at least one defined pressure which is greater than the critical pressure of CO_2, preferably less than 70 MPa and more preferably still less than 30 MPa.

7. The process as claimed in any one of claims 1 to 6, characterized in that the number-average molar mass of the block copolymer is chosen between 1000 and 200 000 g/mol, preferably between 4000 and 50 000 g/mol.

8. The process as claimed in claim 7, characterized in that the number-average molar mass of the hydrophilic block is between 500 and 20 000 g/mol, preferably between 1000 and 10 000 g/mol.

9. The process as claimed in any one of claims 1 to 8, characterized in that the ratio by weight of

the CO_2-philic block to the hydrophilic block is between 1 and 50, preferably between 1 and 20.

10. The process as claimed in any one of claims 1 to 9, characterized in that the CO_2-philic block of the block copolymer is chosen from the group consisting of fluoropolymers and poly(siloxane)s.

11. The process as claimed in claim 10, characterized in that the fluoropolymer is chosen from the group consisting of poly(fluoroether)s, poly(fluoroalkyl acrylate)s and poly(fluoroalkyl methacrylate)s.

12. The process as claimed in claim 11, characterized in that the poly(fluoroalkyl acrylate)s are poly(1,1-dihydroperfluorooctyl acrylate)s and poly(1,1,2,2-tetrahydroperfluorodecyl acrylate)s.

13. The process as claimed in claim 1, characterized in that the nonionic hydrophilic block is chosen from biocompatible hydrophilic polymers.

14. The process as claimed in claim 13, characterized in that the biocompatible hydrophilic polymers are chosen from the group consisting of polysaccharides, hydrophilic cellulose polymers, poly(vinyl alcohol), polyols, and ethylene oxide homo- and copolymers.

15. The process as claimed in claim 14, characterized in that the hydrophilic block is a poly(ethylene oxide).

16. The process as claimed in any one of claims 1 to 15, characterized in that the block copolymers are composed of a poly(1,1,2,2-tetrahydroperfluorodecyl acrylate)s block and of a poly(ethylene oxide) block or are block copolymers of the PEO-b-PFDA type, or are chosen from the group consisting of PFDA-b-PEO-b-PFDA triblock copolymers and PEO-b-PFDA-b-PEO triblock copolymers.

17. A process for the encapsulation of an active principle, comprising a dispersing stage carried out by the process as claimed in any one of claims 1 to 16.

18. The process as claimed in claim 1, characterized in that the water-soluble or hydrophilic substances comprise an active principle chosen from the group consisting of (i) pharmaceuticals,

in particular analgesics, antipyretics, aspirin and its derivatives, antibiotics, anti-inflammatories, antiulceratives, antihypertensives, neuroleptics, antidepressants, oligonucleotides exhibiting a therapeutic activity, peptides exhibiting a therapeutic activity and proteins exhibiting a therapeutic activity, (ii) cosmetics, in particular self-tanning agents and UV stabilizers, and (iii) foodstuffs, such as, for example, vitamins.

19. The process as claimed in claim 18, characterized in that the therapeutic proteins or peptides are chosen from the group consisting of the protein corresponding to parathyroid hormone, growth hormone, α-, β- or γ-interferons, α- or β-erythropoietin (EPO), granulocyte colony-stimulating factor (GCSF), granulocyte-macrophage colony-stimulating factor (GMCSF), vasoactive intestinal peptide (VIP), thyrotopin-releasing hormone (TRH), arginine vasopressin (AVP), angiotensin, insulin, somatotropin, tissue plasminogen activator, clotting factors VIII and IX, glucosylceramidase, lenograstim, molgramostim, filgrastim, interleukins, dornase alfa, PEG-L-asparaginase, PEG-adenosine deaminase, hirudin, eptacog alfa, nerve growth factors, luteinizing hormone-releasing hormone (LHRH), its derivatives and its analogs, somatostatin and its derivatives, triptorelin, bombesin, calcitonin, gastrin-releasing peptide, growth hormone-releasing factor and amylin.

20. A block copolymer comprising at least one CO_2-philic block and at least one biocompatible nonionic hydrophilic block.

21. The block copolymer as claimed in claim 20, characterized in that it is chosen from the group consisting of diblock copolymers and triblock copolymers.

22. The block copolymer as claimed in claim 20, characterized in that the triblock copolymer corresponds either to the formula (1)

hydrophilic/CO_2-philic/hydrophilic (1),

or to the formula (2)

CO_2-philic/hydrophilic/CO_2-philic (2),

in which, respectively, the hydrophilic or CO_2-philic groups can be identical or different.

23. The block copolymer as claimed in claim 20, characterized in that the CO_2-philic block is chosen from the group consisting of fluoropolymers and poly(siloxane)s.

24. The block copolymer as claimed in claim 23, characterized in that that the fluoropolymer is chosen from the group consisting of poly(fluoroether)s, poly(fluoroalkyl methacrylate)s and poly(fluoroalkyl acrylate)s.

25. The block copolymer as claimed in claim 24, characterized in that the poly(fluoroalkyl acrylate)s are poly(1,1-dihydroperfluorooctyl acrylate)s and more particularly poly(1,1,2,2-tetrahydroperfluorodecyl acrylate)s.

26. The block copolymer as claimed in claim 20, characterized in that the biocompatible nonionic hydrophilic block is chosen from the group consisting of polysaccharides, hydrophilic cellulose polymers, poly(vinyl alcohol), polyols, and ethylene oxide homo- and copolymers.

27. The block copolymer as claimed in claim 26, characterized in that the hydrophilic block is a poly(ethylene oxide).

28. The block copolymer as claimed in claim 27, characterized in that it is composed of a poly(1,1,2,2-tetrahydroperfluorodecyl acrylate)s block and of a poly(ethylene oxide) block or is a block copolymer of the PEO-b-PFDA type, or is chosen from the group consisting of PFDA-b-PEO-b-PFDA triblock copolymers and PEO-b-PFDA-b-PEO triblock copolymers.